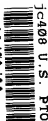


12/08/98



1-408 U.S. PTO

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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. RCA 89,291

First Inventor or Application Identifier F. Zuckerman

Title Magneto-Optical Recording Or Reproducing..

Express Mail Label No. EL197058627US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ \* Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☒ Specification [Total Pages 13]  
- Descriptive title of the Invention  
- Cross References to Related Applications  
- Statement Regarding Fed sponsored R & D  
- Reference to Microfiche Appendix  
- Background of the Invention  
- Brief Summary of the Invention  
- Brief Description of the Drawings (if filed)  
- Detailed Description  
- Claim(s)  
- Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 2]  
i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
4. Oath or Declaration [Total Pages 1]  
a. ☒ Newly executed (original or copy)  
b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))  
(for continuation/divisional with Box 16 completed)  
i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

NOTE FOR ITEMS 1 & 4: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

5. ☐ Microfiche Computer Program (Appendix)
6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)  
a. ☐ Computer Readable Copy  
b. ☐ Paper Copy (identical to computer copy)  
c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

7. ☒ Assignment Papers (cover sheet & document(s))
8. ☒ 37 C.F.R. § 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
9. ☐ English Translation Document (if applicable)
10. ☒ Information Disclosure Statement (IDS) PTO-1449 ☒ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
13. ☐ \* Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired (PTO/SB-09-12)
14. ☒ Certified Copy of Priority Document(s) (if foreign priority is claimed)
15. ☐ Other: .....

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No. \_\_\_\_\_

Prior application information: Examiner \_\_\_\_\_

Group / Art Unit: \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 17. CORRESPONDENCE ADDRESS

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Name (Print/Type) Eric P. Herrmann

Registration No. (Attorney/Agent) 29,169

Signature

Eric P. Herrmann

Date

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**FEE TRANSMITTAL**

Patent fees are subject to annual revision on October 1.

These are the fees effective October 1, 1997.

Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12, See 37 C.F.R. §§ 1.27 and 1.28.

**TOTAL AMOUNT OF PAYMENT** (\$ ) 800.00**Complete if Known**

Application Number	To Be Assigned
Filing Date	Herewith
First Named Inventor	F. Zucker
Examiner Name	To Be Assigned
Group / Art Unit	Unknown
Attorney Docket No.	RCA 89,291

**METHOD OF PAYMENT (check one)**

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:
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- Deposit Account Name CE&RCA Licensing Mgt.
- ☒ Charge Any Additional Fee Required Under 37 C.F.R. §§ 1.16 and 1.17 ☐ Charge the Issue Fee Set in 37 C.F.R. § 1.18 at the Mailing of the Notice of Allowance

2. ☐ Payment Enclosed:
- ☐ Check ☐ Money Order ☐ Other

**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity	Small Entity	Fee	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)					
101	790	201	395		Utility filing fee	760
106	330	206	165		Design filing fee	
107	540	207	270		Plant filing fee	
108	790	208	395		Reissue filing fee	
114	150	214	75		Provisional filing fee	
<b>SUBTOTAL (1)</b>						<b>(\$ ) 760.00</b>

**2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent	Claims		
10	20	X	0
2	3	X	0
Multiple Dependent			

\*\*or number previously paid, if greater; For Reissues, see below

Large Entity	Small Entity	Fee	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)					
103	22	203	11		Claims in excess of 20	
102	82	202	41		Independent claims in excess of 3	
104	270	204	135		Multiple dependent claim, if not paid	
109	82	209	41		** Reissue independent claims over original patent	
110	22	210	11		** Reissue claims in excess of 20 and over original patent	
<b>SUBTOTAL (2)</b>						<b>(\$ ) 0</b>

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity	Small Entity	Fee	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)					
105	130	205	65		Surcharge - late filing fee or oath	
127	50	227	25		Surcharge - late provisional filing fee or cover sheet	
139	130	139	130		Non-English specification	
147	2,520	147	2,520		For filing a request for reexamination	
112	920*	112	920*		Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*		Requesting publication of SIR after Examiner action	
115	110	215	55		Extension for reply within first month	
116	400	216	200		Extension for reply within second month	
117	950	217	475		Extension for reply within third month	
118	1,510	218	755		Extension for reply within fourth month	
128	2,060	228	1,030		Extension for reply within fifth month	
119	310	219	155		Notice of Appeal	
120	310	220	155		Filing a brief in support of an appeal	
121	270	221	135		Request for oral hearing	
138	1,510	138	1,510		Petition to institute a public use proceeding	
140	110	240	55		Petition to revive - unavoidable	
141	1,320	241	660		Petition to revive - unintentional	
142	1,320	242	660		Utility issue fee (or reissue)	
143	450	243	225		Design issue fee	
144	670	244	335		Plant issue fee	
122	130	122	130		Petitions to the Commissioner	
123	50	123	50		Petitions related to provisional applications	
126	240	126	240		Submission of Information Disclosure Stmt	
581	40	581	40		Recording each patent assignment per property (times number of properties)	40
146	790	246	395		Filing a submission after final rejection (37 CFR 1.129(a))	
149	790	249	395		For each additional invention to be examined (37 CFR 1.129(b))	
Other fee (specify) _____						
Other fee (specify) _____						
<b>SUBTOTAL (3)</b>						<b>(\$ ) 40.00</b>

\* Reduced by Basic Filing Fee Paid

**SUBMITTED BY**

Typed or Printed Name Eric P. Herrmann

Signature Eric P. Herrmann

Date 12/16/98**Complete (if applicable)**

Reg. Number 29,169

Deposit Account User ID \_\_\_\_\_

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PD970090 US  
D94/065-Ku-121297

21.09.98

Title

Magneto-optical Recording or Reproducing Device

5 Field of the Invention

The invention relates to a magneto-optical recording or a magneto-optical reproducing device having an erasing facility for information recorded on a magneto-optical recording medium, it also being possible for such a recording or reproducing device to be used, for example, for the continuous magneto-optical recording, buffering and reproduction of video and/or audio signals.

15 Background of the Invention

Magneto-optical recording media and devices for recording and reproducing information stored on magneto-optical recording media are generally known. A known magneto-optical recording medium is the magneto-optical disc, which is also denoted as MOD or MO and in which there is arranged behind a transparent layer a magneto-optical layer on which information or data are stored and from which the stored information or data can be read. In order to store or write information or data onto a magneto-optical disc, the magneto-optical layer is heated by a laser beam, focused onto the disc, to a temperature in the region of the Curie or compensation temperature. Arranged behind the disc is an electromagnet which magnetizes the region heated by the laser beam in one direction of magnetization or the other. A magneto-optical writing device therefore comprises an optical scanning device which co-operates with an electromagnet and is denoted as a pick-up. After the laser beam is switched off, the heated site cools off again below the compensation temperature, and the direction of magnetization fixed by the electromagnet is maintained. It is, so as to say, frozen. In this case, one direction of magnetization

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corresponds to a logic one while the opposite direction of magnetization represents a logic zero.

The information or data are read using a principle which is based on the Kerr effect and on the fact that the plane of polarization of a linearly polarized light beam is rotated by an angle in the case of reflection at a magnetized mirror. The plane of polarization of the reflected light beam is rotated to the right or left in accordance with the direction of magnetization of the mirror. The rotation of the plane of polarization of the light beam reflected by the disc is detected by an optical scanning device, and a corresponding information or data signal is generated.

Provided for the purpose of magnetizing the  
15 magneto-optical layer is an electromagnet which can  
magnetize a region which is swept over by an optical  
scanning device. Magneto-optical recording devices are  
known in which information or data already stored on  
the recording medium must be erased before new  
20 information or data can be recorded. For this purpose,  
the magneto-optical layer is heated by the laser up to  
the Curie or compensation temperature at the sites at  
which the new information or data are to be stored, and  
magnetized in one direction. The plate is initialized.  
25 The laser power is switched between a small and a large  
value as a function of the bit to be stored so as to  
record the new information or data. For example, if a  
logic zero is stored at the previously erased site, the  
laser operates at the low power so that the Curie or  
30 compensation temperature is not reached. For the  
purpose of recording a logic one, by contrast, the  
laser heats the new site to be written on up to the  
Curie or compensation temperature so that said site can  
be remagnetized.  
35 By contrast with this, there are also already known  
magneto-optical recording devices in which already  
stored information or data are directly overwritten on  
the recording medium without firstly having to be

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erased. For the purpose of reliable remagnetization, this method presupposes a high field strength which must be changed over at high speed in order to record new information or data. Since changing over high field strengths at high speed leads in a known way to intense heating of the electromagnet, the data rate up to which this method can be applied is limited. A very high data rate such as required, for example, to store a television signal would lead to impermissible overheating of the write head. In order to store new information or data at a high data rate on a magneto-optical recording medium already written onto, it is therefore necessary for the stored information or data to be erased in advance in accordance with the abovenamed method. For this purpose, before recording it is necessary to provide a time consuming erasing pass, which can be carried out by the magneto-optical writing device provided for recording information or data. In order to permit information or data to be recorded immediately, there is therefore a need for an additional magneto-optical writing device which can then be used to erase in advance information or data already recorded on the magneto-optical recording medium. The magneto-optical recording medium is then initialized by the magneto-optical writing device, also denoted as an erase pick-up.

#### Summary of the Invention

It is the object of the invention to create a magneto-optical recording or reproducing device which permits information or data recorded on a magneto-optical recording medium to be overwritten with information or data of a high data rate without a magneto-optical writing device for erasing recorded information or data, and which requires a low outlay.

This object is achieved by means of the features specified in the main claim. Advantageous

embodiments and developments are specified in subclaims.

5 The invention proceeds from the finding that overwriting directly with a high data rate is rendered possible when there is arranged upstream of the magneto-optical writing device or upstream of the write head an erasing magnet which is, for example, a permanent magnet or electromagnet whose field strength is sufficient to initialize a region upstream of a track to be written without the assistance of a laser. 10 It has been found that magneto-optical recording media can be initialized by a sufficiently strong magnetic field even without the assistance of a laser. This measure renders an erasing pass and an erase pick-up no longer necessary. Information or data already recorded on a magneto-optical disc are directly overwritten with the new information or data, which can also have a high data rate, without a previous erasing pass and a low outlay is required. Recording information or data onto 15 the magneto-optical recording medium is then performed, for example, in a known way using a constant magnetic field and pulsed laser, and the erasing magnet has a magnetic field of opposite polarity to the magnet of the writing device.

25 With regard to the strength of its magnetic field, the erasing magnet is selected such that it erases the disc and/or the magneto-optical recording medium even without the assistance of a laser. In order, when returning to the start of the disc not to erase information or data already recorded and still to be reproduced in the case of a device for continuous recording, the erasing magnet is distanced from the disc, and thus deactivated, during the return, for example by means of an electromagnet or a mechanical 35 device.

In the case of a magneto-optical recording and reproducing device for continuous recording and simultaneous or continuous reproduction of information

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appropriate modules the device can also be designed as a magneto-optical reproducing device having an erasing facility or as a magneto-optical recording device having an erasing facility. The magneto-optical recording and reproducing device represented in Figure 1 can advantageously be used both as a conventional recording and reproducing device and as a magneto-optical recording and reproducing device for continuous recording and reproduction. In accordance with this design, which can be used, for example, for monitoring purposes in banks or for time-shifted reproduction of television transmissions, a magneto-optical recording medium sectioned along its diameter is represented in perspective in Figure 1. By means of a write head, which comprises a writing magnet SM and a first optical scanning device OPUL, information or data are written onto the magneto-optical recording medium inserted into the device. The writing magnet SM and the first optical scanning device OPUL are arranged, in accordance with Figure 1, in a fashion mechanically connected to one another and opposite one another, while the magneto-optical recording medium is located between them.

Since recordings are made on magneto-optical recording media in a track from the inside to the outside, new information or data are recorded in a first region NR of the magneto-optical recording medium in accordance with Figure 1. The write head is, for example, designed by analogy with known write heads. Also provided in accordance with Figure 1 is an erasing facility which is formed in accordance with the invention exclusively by an erasing magnet LM and is arranged upstream of the write head in the scanning direction of the magneto-optical recording medium. The erasing magnet LM is used to initialise the magneto-optical recording medium directly before the recording of new information or data. The result is to produce on the magneto-optical recording medium upstream of the writing magnet SM a second region AE in which

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information or data previously stored on the magneto-optical recording medium are erased. The initialization of the magneto-optical recording medium before the recording of new information or data renders it possible, in particular, for regions of the magneto-optical recording medium already written on earlier to be recorded and/or overwritten with a high data rate such as is required, for example, to record video signals.

10       The erasing magnet LM is provided in Figure 1 as a so-called permanent magnet which is arranged next to the writing magnet SM on the same side relative to the magneto-optical recording medium, and has a direction of magnetization opposite to the writing magnet SM. In addition, both the writing magnet SM and the erasing magnet LM can optionally also be designed as electromagnets. It is to be seen that the erasing facility consists only of an erasing magnet LM, and that no optical scanning device assigned to the erasing magnet LM is provided. No laser which heats the magneto-optical recording medium is provided for erasing stored information or data. In order, nevertheless, to achieve erasure of information or data already stored on a magneto-optical recording medium, and/or to initialize the magneto-optical recording medium, provision is made of an erasing magnet LM with a field strength sufficient to erase and/or initialize the magneto-optical recording medium. The field strength of the erasing magnet LM, which is greater by comparison with the field strength of the writing magnet SM, is used to erase information or data stored on the magneto-optical recording medium and to initialize the magneto-optical recording medium even without the assistance of a laser. This comparatively greater field strength of the erasing magnet LM leads, if appropriate, to the fact that, in accordance with the Figure, a plurality of tracks of the magneto-optical recording medium are simultaneously erased

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and/or initialized, thus producing on the magneto-optical recording medium a third region BE, which corresponds to a region currently erased and/or currently initialized. In particular in a device for  
5 the continuous recording or simultaneous reproduction of information or data, the simultaneous erasure of a plurality of tracks is insignificant, since the erasure region is small by comparison with the recording region and the progress of the erasure corresponds to that of  
10 the writing.

In accordance with Figure 1, the erasing magnet LM is preferably mechanically connected to the write head, and is thereby guided over the magneto-optical recording medium in advance of the write head in the  
15 normal write or read direction of the magneto-optical recording medium. In the case of an optical scanning device OPUI comprising coarse and fine drives, the mechanical connection between the writing magnet SM and the erasing magnet LM is provided in such a way that  
20 the writing magnet SM and the erasing magnet LM are connected to the coarse drive of the optical scanning device OPUI, or follow of the coarse drive. In an embodiment according to Figure 1 which uses permanent magnets and laser modulation as the selected writing  
25 method, only slight requirements are placed on the quality and/or accuracy of the positioning and tracking of the writing magnet SM and the erasing magnet LM. It is sufficient to connect the writing magnet SM and erasing magnet LM to the optical scanning device OPUI  
30 in a fashion corresponding to a metal or plastic angle which is produced with moderate precision. In an embodiment in accordance with Figure 1, a means is to be provided for deactivating the erasing magnet LM, in order not to erase recorded information or data during  
35 a jump into the inner region of the magneto-optical recording medium. For this purpose, the connection between the erasing magnet LM and the writing device is, if appropriate, to be provided, in accordance with

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Figure 2, via a joint G, and the erasing magnet LM is to be distanced from the magneto-optical recording medium for example by an electromagnet EM. For the purpose of continuous recording, the write head is  
5 displaced in a jump from the outer into the inner region of the magneto-optical recording medium. Deactivation of the writing magnet SM is not required if the field strength of the writing magnet SM is selected such that the magneto-optical recording medium  
10 is influenced only in co-operation with the laser of the optical scanning device OPU1.

A recording and reproducing device according to Figure 1 for continuously recording and reproducing information or data has a second optical scanning  
15 device OPU2 for reading the recorded information or data. However, a second optical scanning device OPU2 is required only if, for example, it is intended to reproduce a radio or television transmission while simultaneously recording a radio or television  
20 transmission, in order to enable a time-shifted reproduction, for example. After the reproduction of information or data which are recorded, in accordance with Figure 1, in a fourth region LR on the magneto-optical recording medium, the reading device and/or  
25 second optical scanning device OPU2 reaches the outer region of the magneto-optical recording medium. To continue the reproduction, the second optical scanning device OPU2 consequently jumps into the interior or first region NR of the magneto-optical recording  
30 medium, in which new information or data are recorded. In Figure 1, this jump is specified by an optical scanning device OPU2 represented by dashed lines. In the case of a device for simultaneously recording and reproducing information or data, provision is then made  
35 of a first optical scanning device OPU1 for overwriting and a second optical scanning device OPU2 for reproduction, without the need for a third optical scanning device for erasing. The use of the permanent

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magnet for erasing renders superfluous the use of a third optical scanning device which would be used to carry out erasure before the recording.

- However, the second optical scanning device
- 5 OPU2, provided exclusively for reading the magneto-optical recording medium, and/or the reading device of the magneto-optical recording medium can also be used in a known way for optionally accessing information or data on the magneto-optical recording medium. A
- 10 connection to a so-called live transmission is then achieved, for example, by jumping over recording regions. In the case of a reproducing device having an erasing facility, it is possible in accordance with a selected embodiment to provide a separate drive for the
- 15 erasing magnet LM or the erasing magnet LM can be connected to the second optical scanning device.

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Patent Claims

1. Magneto-optical recording or reproducing device  
5 having an erasing facility and, in the case of a recording device, having a writing device, formed from a writing magnet and an optical scanning device, for overwriting information or data recorded on a magneto-optical recording medium, wherein  
10 said erasing facility is formed by an erasing magnet having a field strength sufficient to initialize the magneto-optical recording medium.
2. Magneto-optical recording or reproducing device  
15 according to Claim 1, wherein the erasing magnet has a mechanical connection to the writing device.
3. Magneto-optical recording or reproducing device  
20 according to Claim 1, wherein the erasing magnet has a mechanical connection to the writing device and the mechanical connection of the erasing magnet to the writing device is a joint.
4. Magneto-optical recording or reproducing device  
25 according to Claim 1, wherein the erasing magnet is an erasing magnet having a field strength sufficient to initialize the magneto-optical recording medium without the assistance of a laser.
- 30 5. Magneto-optical recording or reproducing device according to Claim 1, wherein the erasing facility is an erasing magnet having a magnetic field which is directed opposite to a magnet of the writing device and which has a field strength sufficient to initialize the  
35 magneto-optical recording medium.

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6. Magneto-optical recording or reproducing device according to Claim 1, wherein the erasing magnet is a permanent magnet.

5 7. Magneto-optical recording or reproducing device according to Claim 1, wherein the erasing magnet is connected to a means for deactivating the erasing magnet.

10 8. Magneto-optical recording or reproducing device according to Claim 1, wherein the erasing magnet is connected to a means for deactivating the erasing magnet and the means for deactivating the erasing magnet is an electromagnet.

15 9. Magneto-optical recording or reproducing device according to Claim 1, wherein the erasing magnet is an electromagnet.

20 10. Magneto-optical recording or reproducing device having an erasing facility and, in the case of a recording device, having a writing device, formed from a writing magnet and an optical scanning device, for overwriting information or data recorded on a magneto-  
25 optical recording medium, comprising:  
a first optical scanning device connected to a writing magnet for recording data on the magneto-optical recording medium,  
an erasing magnet for initializing the magneto-optical  
30 recording medium, and  
a second optical scanning device for reproducing information or data stored on the magneto-optical recording medium,  
for the purpose of simultaneously recording and  
35 reproducing information or data.

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Abstract

The invention relates to a magneto-optical recording or reproducing device having an erasing facility for information or data recorded on a magneto-optical recording medium.

According to the invention, the erasing facility is formed by an erasing magnet having a field strength sufficient to initialize the magneto-optical recording medium without the assistance of a laser and/or an optical scanning device.

The field of application of the invention relates to magneto-optical recording or reproducing devices.

Figure 1

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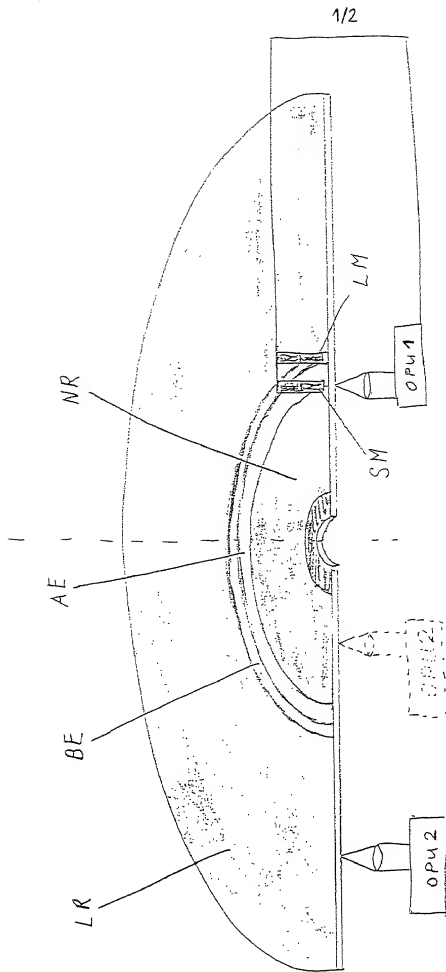


Fig. 1



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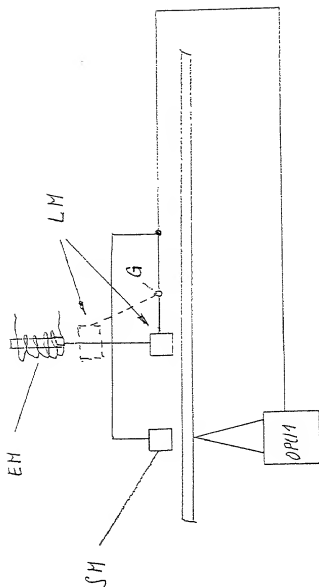


Fig. 2

DECLARATION FOR UNITED STATES PATENT APPLICATION,  
POWER OF ATTORNEY, DESIGNATION OF CORRESPONDENCE ADDRESS

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and that I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

## MAGNETO-OPTICAL RECORDING OR REPRODUCING DEVICE

the specification of which

(CHECK ONE)

is attached hereto.

( )

was filed on

Application Serial. No.

and was amended on .

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 CFR 1.56(a).

I hereby claim foreign priority benefits under 35 USC 119 of any foreign application(s) for patent, utility model, design or inventor's certificate having a filing date before that of the application(s) on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
Number	Country	Date Filed	Yes	No
197 56 458.5	DE	December 18, 1997	xx	

I hereby claim the benefit under 35 USC 120 of any US Application(s) listed below, and, insofar as the subject matter of each of the claims of this Application is not disclosed in the prior US application in the manner provided by the first paragraph of 35 USC 112, I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 CFR 1.56(a).

Serial No.: Filed:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under of 18 USC 1001 and that such wilful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Joseph S. Tripoli (Reg. No. 26,040) and Frederick A. Wein (Reg. No. 27,168) Telephone: (609) 734-9518.

Address all correspondence to Joseph S. Tripoli, Patent Operations - GE and RCA - Licensing Management Operation, Inc. - CN 5312 - Princeton, New Jersey 08543-0028.

Signature: Friedhelm Zucker  
Sole or First Joint Inventor: Friedhelm Zucker

Date: 28th day of Sept. 1998.

Citizenship: DE

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Friedhelm Zucker  
Serial No. : To Be Assigned  
Group Art Unit: Unknown  
Filed : Herewith  
For : MAGNETO-OPTICAL RECORDING OR REPRODUCING  
SERVICE

APPOINTMENT OF ASSOCIATE ATTORNEY

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

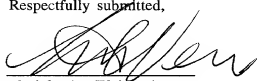
Sir:

I, Frederick A. Wein, an attorney of record, hereby appoint Eric P. Hermann, Reg. No. 29,169 as an associate attorney in the above-identified application, with full power to prosecute the above-identified application, to make alterations and amendments therein, and to transact all business in the Patent and Trademark Office connected therewith.

PLEASE ADDRESS ALL FUTURE COMMUNICATIONS TO:

Joseph S. Tripoli  
Patent Operations  
GE & RCA Licensing Management Operation, Inc.  
P.O. Box 5312  
Princeton, NJ 08543-5312

Respectfully submitted,

By   
Frederick A. Wein, Attorney  
Reg. No. 27,168

Dec. 8, 1998

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